

Unit 4 Checking & Savings

04/22/15

Please turn in any missing work which you have completed including Unit 3 practice problems and tests.

Unit 4 Checking & Savings

04/22/15

Unit 4 Project

- Choose a partner with whom to work
- Choose a bank or credit union in Denver
- Research savings accounts & checking accounts
- Present findings to class via MS Powerpoint or Google Presentation (1 slide about institution + 1 slide per account)
- Due Friday, 05/08/2015

Unit 4 Checking & Savings

04/22/15

Unit 4 Project

Banks

- FirstBank
- US Bank
- Key Bank
- Chase Bank
- BBVA Compass Bank
- Citywide Bank
- Colorado Business Bank
- The Bank of Denver
- Wells Fargo Bank
- TCF

Credit unions

- Sooper Credit Union
- Credit Union of Denver
- Denver Community Credit Union
- Bellco Credit Union
- Public Service Credit Union
- Westerra Credit Union
- Credit Union of Colorado
- Denver Fire Department Federal Credit Union
- Partner Colorado Credit Union
- Security Service Federal Credit Union

Unit 4 Project

What you need to find out:

- Are there membership limitations for the institution?
- What types of accounts are available?
- Are there restrictions on certain accounts?
 - Direct deposit
 - Minimum balance
 - Minimum activity
 - Fees
- What incentives are there on the accounts?
 - Toaster, GPS unit
 - Gift card, bonus deposit
- What tools come with the accounts or membership?
 - Check card
 - Online banking

IWBAT

- define simple interest
- understand simple interest and the formula $I = prt$
- practice computing a balance in an account incorporating interest.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

4.1 Simple Interest

04/22/15

Interest - an amount of money the bank pays you on the money you deposited

Simple interest - interest paid only on your deposit

IWBAT define simple interest, understand simple interest and the formula $I = prt$, and practice computing a balance in an account incorporating interest.

4.1 Simple Interest

04/22/15

$$I = prt$$

$$\text{Interest} = \text{principal} \cdot \text{rate} \cdot \text{time}$$

$$\text{Total value} = p + I$$

(Future value)

Compounding period

annually

1 time per year

semiannually

2

quarterly

4

monthly

12

weekly

52

daily

365

IWBAT define simple interest, understand simple interest and the formula $I = prt$, and practice computing a balance in an account incorporating interest.

4.1 Simple Interest

04/22/15

Five year old Johanna deposits \$100 of Christmas money in a savings account which pays 3% simple interest compounded annually. With no further deposits or withdrawals, how much will her account be worth at Christmas when she is 18?

$$FV = P + I$$

$$= 100 + .03 \cdot 13 \cdot 100$$

$$I = P \cdot r \cdot t = 100 + 39$$

$$FV = \$139$$

IWBAT define simple interest, understand simple interest and the formula $I = prt$, and practice computing a balance in an account incorporating interest.

4.1 Simple Interest

04/22/15

Jessy deposits \$300 in a savings account which pays 3% simple interest compounded monthly. With no further deposits or withdrawals, how much will the account be worth in eight years?

$$FV = \$300 + \frac{.03 \cdot 96 \cdot 300}{12}$$

$$FV = \$300 + .03 \cdot 8 \cdot 300 \\ = \$372$$

Periodic Interest Rate

$$\frac{\text{Int. rate}}{\# \text{ compounding periods per year}}$$

HW: Practice: 4.1.2

IWBAT define simple interest, understand simple interest and the formula $I = prt$, and practice computing a balance in an account incorporating interest.

4.1 Simple Interest

04/22/15

Vocabulary: Appendix A.3 Key Terms

Practice: 4.1.2

Quiz 4.1.3

IWBAT define simple interest, understand simple interest and the formula $I = prt$, and practice computing a balance in an account incorporating interest.

4.1 Simple Interest

04/23/15

Define simple interest in your own words.

interest paid to you only on
your deposits, the interest
paid does not collect interest

<http://goo.gl/forms/42EGLvkDES>

IWBAT define simple interest, understand simple interest and the formula $I = prt$, and practice computing a balance in an account incorporating interest.

4.1 Simple Interest

04/23/15

Practice: 4.1.2

	Simple Interest Rate	Frequency of Simple Interest Calculation	Number of Periods per Year	Periodic Interest Rate	Number of Years	Total Number of Periods
Example	3.5%	Annually	1	3.5%	5	5
1. CD A	4.4%	Quarterly	4	1.1%	12	48
2. CD B	7.2%	Monthly	12	0.6%	8	96
3. CD C	5.6%	Semiannually	2	2.8%	15	30

SI

$\div n$

= PIR

n

$\times yr = \text{Total per}$

IWBAT define simple interest, understand simple interest and the formula $I = prt$, and practice computing a balance in an account incorporating interest.

4.1 Simple Interest

04/23/15

Practice: 4.1.2

	Principal	Periodic Interest Rate	Number of Periods	Interest Earned	Future Value of Principal
Example	\$8000	0.4%	60	\$1920	\$9920
4. Deposit A	\$6000	2.4%	14	\$2016	\$8016
5. Deposit B	\$9000	1.3%	16	\$1872	\$10,872
6. Deposit C	\$7000	0.5%	72	\$2520	\$9520

$$P \cdot r \cdot t = I \quad + P = FV$$

IWBAT define simple interest, understand simple interest and the formula $I = prt$, and practice computing a balance in an account incorporating interest.

4.1 Simple Interest

04/23/15

Practice: 4.1.2

7) \$1500, comp. quarterly, 3 mo., \$1509

Annual % = ?

$$\begin{array}{l} \text{1 quarter} = 3 \text{ mo}, \$9 = \text{one period of interest} \\ \frac{\$1500 \times \overset{r}{9} \times \overset{t}{1}}{\$1500} = \frac{\overset{I}{\$9}}{\$1500} \end{array}$$

$$\begin{array}{l} \% = .006 \\ \times 4 \end{array}$$

$$\begin{array}{l} \text{Annual} = .024 \\ = 2.4\% \end{array}$$

IWBAT define simple interest, understand simple interest and the formula $I = prt$, and practice computing a balance in an account incorporating interest.

4.1 Simple Interest

04/23/15

Vocabulary: Appendix A.3 Key Terms

Practice: 4.1.2

Quiz 4.1.3

<http://goo.gl/forms/42EGLvkDES>

IWBAT define simple interest, understand simple interest and the formula $I = prt$, and practice computing a balance in an account incorporating interest.

4.2 Exponential Growth

04/24/15

Calculate simple interest

Justina opened a savings account with a deposit of \$1,000. Saving for college, she left the money untouched from the time she was 12 until she was 18. This account paid 3.6% annual simple interest compounded quarterly. How much did Justina have in this account for college when she was ready to withdraw the funds?

$$FV = 1000 + \frac{.036}{4} \cdot 24 \cdot 1000$$
$$FV = \$1216$$

<http://goo.gl/forms/42EGLvkDES>

4.2 Exponential Growth

04/24/15

Review of exponents

$$f(x) = b^x$$

$$b \cdot b \cdots$$

$$f(3) = b^3 = b \cdot b \cdot b$$

$$f(x) = b^x = \overbrace{b \cdots b}^x$$



IWBAT

- evaluate exponential expressions
- define the concepts of exponential growth and exponential decay.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

4.2 Exponential Growth

04/24/15

$$f(x) = a * b^x$$

a = initial amount (principal)

b = rate of change

x = time (number of periods)

Growth: $b > 1$

Evaluate:

$$a = 500$$

$$b = 1.05$$

$$x = 24$$

5% growth

$$f(24) = 500(1.05)^{24}$$

$$f(24) = 1612.55$$

Decay: $0 < b < 1$

Evaluate:

$$a = 500$$

$$b = 0.65$$

$$x = 24$$

35% decay

$$f(24) = 500(0.65)^{24}$$

$$f(24) = 0.016$$

IWBAT evaluate exponential expressions and define the concepts of exponential growth and exponential decay.

4.2 Exponential Growth

04/24/15

Rice problem

Linear growth:

Day 1: 1 grain

Day 2: 2 grains +1

Day 3: 3 grains +1 ...

Exponential growth:

Day 1: 1 grain

Day 2: 2 grains $\times 2$

Day 3: 4 grains $\times 2$...

On day 30, how many grains of rice do you have?

$$f(30) = 30 \text{ grains}$$

$$f(x) = 1(2)^x$$

$$f(30) = 1(2)^{30}$$

$$f(30) =$$

$$1,073,741,824 \text{ grains}$$
$$18,446,744,073,709,551,615$$
$$7^{30} = 22,519,864,039,069,100,000,000,000,000,000$$

IWBAT evaluate exponential expressions and define the concepts of exponential growth and exponential decay.

4.2 Exponential Growth

04/24/15

$$f(t) = P\left(1 + \frac{r}{n}\right)^{nt}$$

$$f(6) = 1000\left(1 + \frac{.036}{4}\right)^{4 \cdot 6}$$

$$f(6) = 1000(1 + .009)^{24}$$

$$f(6) = \$1239.90$$

$$\begin{array}{r} 1216 \\ \hline \$23.90 \end{array}$$

P = principal

r = annual (APR)

n = Number of
compounding
periods per yr

t = time (yr)

As $n \Rightarrow \infty$,

$$f(t) = Pe^{rt}$$

$$f(x) = a * e^x$$

$$f(6) = 1000 e^{(.036 \cdot 6)}$$

$$f(6) = \$1241.10$$

IWBAT evaluate exponential expressions and define the concepts of exponential growth and exponential decay.

4.2 Exponential Growth

04/24/15

Vocabulary: Appendix A.3 Key Terms

Practice: 4.2.2

Quiz 4.2.3

IWBAT evaluate exponential expressions and define the concepts of exponential growth and exponential decay.

4.3 Compound Interest

04/27/15

Evaluate the exponential expressions

$$f(x) = 2^x$$

$$g(x) = \left(\frac{1}{2}\right)^x$$

$$f(2) = 2^2 = 4$$

$$g(2) = \left(\frac{1}{2}\right)^2 = \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4} \quad (.25)$$

$$f(8) = 2^8 = 256$$

$$g(8) = \left(\frac{1}{2}\right)^8 = \frac{1^8}{2^8} = \frac{1}{256}$$

$$f(2) * g(2) = 1$$

4.3 Compound Interest

04/27/15

Define compound interest for a general number of periods.

$$f(t) = P\left(1 + \frac{r}{n}\right)^{nt} \quad FV = P\left(1 + \frac{r}{n}\right)^{nt}$$

$$P = \$2,500$$

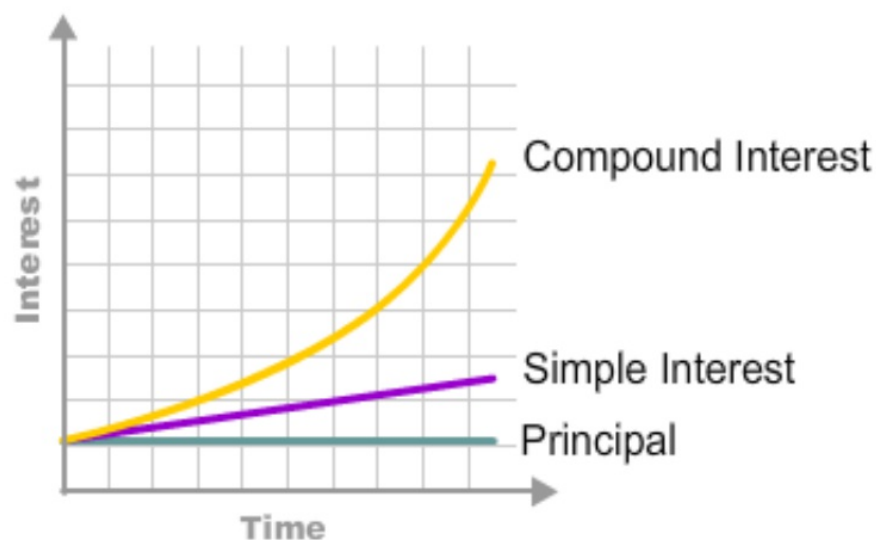
$$r = 4\%$$

$$t = 10 \text{ yr.}$$

$$n = 1, 4, 12, 365$$

$$f(10) = 2500 \left(1 + \frac{.04}{4}\right)^{(4 \cdot 10)}$$

$$f(10) = FV = \$3722.15$$



4.3 Compound Interest

04/27/15

IWBAT

- practice using the formula $B = p(1 + r)^n$ and
- explore continuous compounding as an example of exponential growth.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

4.3 Compound Interest

04/27/15

Compound interest table

Initial investment: \$12,000 at 10%

Frequency of compounding	5 years	10 years	15 years	20 years
Annually	\$19,326.12	\$31,124.91	\$50,126.98	\$80,730
Quarterly	\$19,663.40	\$32,220.77	\$52,797.48	\$86,514.81
Monthly	\$19,743.71	\$32,484.50	\$53,447.03	\$87,936.88
Daily	\$19,783.30	\$32,614.91	\$53,769.22	\$88,644.39

IWBAT practice using the formula $B = p(1 + r)^n$ and reading compound interest tables and explore continuous compounding as an example of exponential growth.

4.3 Compound Interest

04/27/15

Continuous compounding

$$f(t) = Pe^{rt} \quad FV = Pe^{rt}$$

$$P = \$2,500$$

$$r = 4\%$$

$$t = 10 \text{ yr.}$$

$$f(10) = 2500 e^{(.04 \cdot 10)}$$

$$FV = \$3729.56$$

IWBAT practice using the formula $B = p(1 + r)^n$ and reading compound interest tables and explore continuous compounding as an example of exponential growth.

4.3 Compound Interest

04/27/15

TVM solver (yellow calc.) Apex 4.3.1 p.7, 9, & 17

$P = \$2500$
 $I\% = 4\%$
 $t = 10\text{yr}$
 $\text{Comp} = 4$
1 \$ 3700.61
365 \$ 3729.48
12 \$ 3727.08

APPS - Finance - TVM Solver

$n = 10$

$I\% = 4$

$PV = -2500$

$PMT = 0$

$FV =$ ALPHA + Enter \$ 3722.15

$P/Y = 1$

$C/Y = 4$

$PMT =$ END

IWBAT practice using the formula $B = p(1 + r)^n$ and reading compound interest tables and explore continuous compounding as an example of exponential growth.

4.3 Compound Interest

04/27/15

Vocabulary: Appendix A.3 Key Terms

Practice: 4.3.2

Quiz 4.3.3

IWBAT practice using the formula $B = p(1 + r)^n$ and reading compound interest tables and explore continuous compounding as an example of exponential growth.

4.4 The Rule of 72 (and 69)

04/29/15

Calculate compound interest.

Julia invested \$1,234 in 1996 in a savings account with an annual interest rate of 1.2% compounded monthly. What should her account balance be in 2015?

$$F(19) = 1234 \left(1 + \frac{.012}{12}\right)^{(12 \cdot 19)}$$

$$\$1549.83$$

IWBAT

- understand when to use the rule of 72 versus the rule of 69
- use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

4.4 The Rule of 72 (and 69)

04/29/15

Calculate and estimate the amount of time for an investment to double.

How long will it take \$2,500 to double at an annual interest rate of 4%? Use the TVM solver.

$$\begin{array}{l} N = ? \\ I\% = 4 \\ -7000 \quad PV = -2500 \\ 14000 \quad PMT = 0 \\ \quad \quad \quad FV = 5000 \\ \quad \quad \quad P/Y = 1 \\ \quad \quad \quad C/Y = 1 \end{array}$$

$$\begin{array}{l} 17.67 \text{ yr} \\ 17 \text{ yr } 8 \text{ mo} \\ 17.67 \text{ yr} \end{array}$$

4.4 The Rule of 72 (and 69)

04/29/15

Rule of 72

If you save your money in an account with **annual interest rate** r , you can approximate the number of years needed to double your **principal** by

$$\frac{72}{r \cdot 100}$$

This approximation works for compounding periods up to weekly. *Monthly, quarterly, semi-annually, annually*

How long will it take \$2,500 to double at an annual interest rate of 4%?

$$\frac{72}{.04 \times 100} = \frac{72}{4} = 18 \text{ yr}$$

IWBAT understand when to use the rule of 72 versus the rule of 69 and use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve.

4.4 The Rule of 72 (and 69)

04/29/15

To have \$1,000,000 by your 60th birthday, how much do you need to invest at 6% interest now? Solve using the Rule of 72.

$\frac{72}{6} = 12 \text{ yr to double}$		60 y.o.	\$1,000,000
42 yr		48	\$500,000
		36	\$250,000
		24	\$125,000
		18	\$93,750
		12	\$62,500

IWBAT understand when to use the rule of 72 versus the rule of 69 and use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve.

4.4 The Rule of 72 (and 69)

04/29/15

Rule of 69

If you save your money in an account with annual interest rate r , you can approximate the number of years needed to double your principal by

$$\frac{69}{r \cdot 100}$$

Use this approximation for daily and continuous compounding.

$$6\% \quad \frac{69}{6} = 11.5 \text{ yr}$$

IWBAT understand when to use the rule of 72 versus the rule of 69 and use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve.

4.4 The Rule of 72 (and 69)

04/29/15

Inflation (reduction in buying power)

Use the Rule of 72 to calculate how long it will take for your buying power to halve with a 1.9% rate of inflation. Please answer in years and months.

$$\frac{72}{1.9} = 37 \text{ yr } 11 \text{ mo}$$

IWBAT understand when to use the rule of 72 versus the rule of 69 and use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve.

4.4 The Rule of 72 (and 69)

04/29/15

Vocabulary: Appendix A.3 Key Terms

Practice: 4.4.2

Quiz 4.4.3

IWBAT understand when to use the rule of 72 versus the rule of 69 and use the inflation rate to calculate and estimate the time it takes for a person's buying power to halve.

**Explain when to use the Rule of 72
and when to use the Rule of 69.**

Rule of 72 is for compounding up to
Weekly (annually, semi-annually, quarterly,
monthly, weekly)

Rule of 69 is for daily and continuous
compounding.

These Rules are used to calculate how
much time it takes to double our
investment. We need to know the annual
interest rate.

IWBAT

- understand how checking accounts work, including interest
- how to write a check.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

4.5 Checking Accounts

04/30/15

What is a checking account? Why use one?

Your money is saved for future use. You can take money out with a debit card swipe or write a check.

Checking accounts save you from carrying large amounts of cash, but accessing the money is easy.

IWBAT understand how checking accounts work, including interest and how to write a check.

4.5 Checking Accounts

04/30/15

Understand the fees associated with a checking account.

→ Overdraft
ATM
Swipe fee
teller fee
per check fee
check cashing
no direct deposit
minimum balance
activation
large withdrawal

IWBAT understand how checking accounts work, including interest and how to write a check.

4.5 Checking Accounts

Parts of a check

04/30/15

The image shows a sample check with the following details and handwritten annotations:

- Account Holder / Payer:** ZACK MORIS, 13 BAYSIDE WAY, LOS ANGELOS, CA 90001. (Circled in yellow with "Acct-holder" and "Payer" written above it.)
- Date:** 20. (Circled in yellow with "Date" written above it.)
- Check Number:** 101. (Circled in yellow with "101" and "ck #" written next to it.)
- Payee:** THE APEX BANK. (Circled in yellow with "Payee" written above it.)
- Amount:** \$ ##. (Circled in yellow with "Amt in words and how" written above it.)
- Bank:** SEATTLE MAIN OFFICE, THE APEX BANK, 20 FAKE STREET, SEATTLE WA 98101. (Circled in yellow with "Acct" and "AT" written next to it.)
- Memo:** Reminder. (Circled in yellow with "Reminder" written above it.)
- Signed:** Zack Moris. (Circled in yellow with "Zack Moris" written next to it.)
- Routing Number:** 123456789. (Circled in yellow with "Routing Acct" written above it.)
- Check Number (bottom):** 0101. (Circled in yellow.)

IWBAT understand how checking accounts work, including interest and how to write a check.

4.5 Checking Accounts

04/30/15

Your \$950 rent is due on the first of the month to Speyside Properties. Fill out the check for next month's rent payment.

ZACK MORIS
13 BAYSIDE WAY
LOS ANGELOS, CA 90001

101

4/30 20 15

PAY Speyside properties \$ 950⁰⁰/₁₀₀
TO THE ORDER OF nine hundred fifty ⁰⁰/₁₀₀ DOLLARS

SEATTLE MAIN OFFICE
THE APEX BANK
20 FAKE STREET, SEATTLE WA 98101

MEMO may's rent SIGNED Zack Moris

⑆121000248⑆ 12345678⑈ 0101

IWBAT understand how checking accounts work, including interest and how to write a check.

4.5 Checking Accounts

04/30/15

Check register

Check Number	Date	Description of Transaction	Payment/Debit (-)	Fee	Deposit/Credit (+)	Balance

Number	Date	Transaction	Withdrawal	✓	Deposit	
						\$2874.26
101	4/30	Speyside Prop - 5/rent	950 00			1924 26
	4/30	Hooters	50 00			1874 26
	5/1	Pay check			2000 00	3874 26
	5/1	Cash withdrawal	80 00			3794 26

Record the rent check in your register.

Your previous balance was \$2874.26.

IWBAT understand how checking accounts work, including interest and how to write a check.

4.5 Checking Accounts

Check endorsements

04/30/15



IWBAT understand how checking accounts work, including interest and how to write a check.

4.5 Checking Accounts

Deposit slip

04/30/15

CHECKING DEPOSIT

DEPOSIT TO THE ACCOUNT OF
NAME Dedrae Q

DATE 4/30/15

PLEASE BE SURE EACH ITEM IS PROPERLY ENDORSED. USE OTHER SIDE TO LIST ADDITIONAL CHECKS.

903

YOUR BANK

DEPOSITS SUBJECT TO CORRECTION BY PROOF DEPARTMENT
ALL ITEMS CREDITED SUBJECT TO THE FINAL PAYMENT

ACCOUNT NUMBER
* 1 2 3 4 5 6 7 8

9876543210

☒ CASH

Zack M

work

SUBTOTAL

LESS CASH RECEIVED

\$ 1700.00

900	00
1000	00
1900	00
200	00
1700	00

03

IWBAT understand how checking accounts work, including interest and how to write a check.

4.5 Checking Accounts

04/30/15

Vocabulary: Appendix A.3 Key Terms

Practice: 4.5.2

Quiz 4.5.3

IWBAT understand how checking accounts work,
including interest and how to write a check.

4.6 Balancing your Checkbook

05/01/15

When might you incur service fees or overdraft charges on a checking account?

When you spend more than is in your checking account, you receive an overdraft charge.

Service fees: ATM, teller, etc.

4.6 Balancing your Checkbook

05/01/15

IWBAT


- reconcile a checkbook
- explore some common accounting errors and how to detect them.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

4.6 Balancing your Checkbook

05/01/15

Learning how to read bank statements.

		FIRST BANK OF APEX 1234 Main St. City, State		CHECKING ACCOUNT STATEMENT Page : 1 of 1	
JOHN DOE 1111 Balance St. City, State		Statement period 2010-10-09 to 2010-11-08		Account No. 123-45-678	
Date	Description	Ref.	Debits	Credits	Balance
2010-10-08	Previous balance		—	+	.55
2010-10-14	Payroll Deposit - HOTEL			694.81	695.36
2010-10-14	Web Bill Payment - MASTERCARD	9685	200.00		495.36
2010-10-16	ATM Withdrawal - INTERAC	3990	21.25		474.11
2010-10-16	Fees - Interac		1.50		???
*** Totals ***			???	???	

101
102X
103
104

IWBAT reconcile a checkbook and explore some common accounting errors and how to detect them.

4.6 Balancing your Checkbook

05/01/15

Reconciliation — to come to an agreement
to make your checkbook and
bank statement agree

What you need to reconcile:

1. deposits (direct deposit or otherwise)
2. interest
3. checks cleared
4. outstanding checks
5. bank fees
6. cash withdrawals
7. online bill payments
8. debit card transactions
9. transfer of funds

IWBAT reconcile a checkbook and explore some
common accounting errors and how to detect them.

4.6 Balancing your Checkbook

Reconciling tools

05/01/15

Verifying That Two Groups of Numbers May Add Up to the Same Value

1. Add all *digits* of all the numbers in each column.
2. Do this again if needed until you reach a single digit.
3. Compare the two single digits you get in the end.

If they do not agree, then the numbers in the two columns cannot add up to the same value.

Imagine the numbers in the first column are 23, 14, and 9, and the second column contains 20 and 27. You want to know if the columns are balanced — that is, do the numbers in the first column add up to 47?

$$\begin{array}{r} 23 \\ 14 \\ 9 \\ \hline \end{array} \quad \begin{array}{r} 5 \\ 5 \\ 9 \\ \hline 19 \\ \hline 10 \\ \hline 1 \end{array} \quad \begin{array}{r} 20 \\ 27 \\ \hline \end{array} \quad \begin{array}{r} 2 \\ 9 \\ \hline 11 \\ \hline 2 \end{array} \quad \begin{array}{r} 125 \\ \hline 8 \end{array}$$


IWBAT reconcile a checkbook and explore some common accounting errors and how to detect them.

4.6 Balancing your Checkbook

05/01/15

Transposed numbers

Columns should add to the same total, but do not. Subtract column sums. If the difference is divisible by 9, look for transposed numbers (e.g. 34 instead of 43).



34	43
48	84
62	62
<hr/>	<hr/>
144	180

99
Divisible by 9

(36)

IWBAT reconcile a checkbook and explore some common accounting errors and how to detect them.

4.6 Balancing your Checkbook

05/01/15

Vocabulary: Appendix A.3 Key Terms

Practice: 4.6.2

Quiz 4.6.3

IWBAT reconcile a checkbook and explore some common accounting errors and how to detect them.

4.7 Comparing Checking Accounts

05/04/15

What does it mean to reconcile your checkbook?

To get our checkbook and bank statement to agree. Often the checkbook needs updating with bank fees.

**Banking project due Wednesday, May 13th.
Unit exam Wednesday, May 13th.**

4.7 Comparing Checking Accounts

05/04/15

IWBAT

- understand the various fees that may be associated with a checking account
- decide whether a checking account is appropriate given a person's particular needs.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

4.7 Comparing Checking Accounts

05/04/15

Compare two checking accounts based on various factors.

- Debit card?
- Per check fee?
- ATM fee?
- Monthly service fee?
 - Minimum balance?
 - Direct deposit?
- Interest?
 - Final balance?
 - Average monthly balance?

IWBAT understand the various fees that may be associated with a checking account and decide whether a checking account is appropriate given a person's particular needs.

4.7 Comparing Checking Accounts

05/04/15

Typical account features

Account Features	Basic Free Checking	Student Checking	Regular Checking	Interest Checking
ATM access	FREE ✓	FREE ✓	FREE ✓	FREE ✓
Online Bill Pay E-mail Alerts Online Check Images Online Statements	FREE ✓	FREE ✓	FREE ✓	FREE ✓
Earns Interest				YES ✓
Monthly Service Fee	None with direct deposit, or 5 or more debit card purchases during each statement period; otherwise \$6	None, must be a student 18+ years old	Waived with \$1000 minimum checking balance; otherwise \$12	Waived with \$1500 minimum checking balance; otherwise \$20
Debit Card	FREE ✓	FREE ✓	FREE ✓	FREE ✓

Fractional reserve banking -

A type of banking system in which only a fraction of bank deposits are backed by actual cash on hand. The rest of the money deposited is not available for immediate withdrawal.

IWBAT understand the various fees that may be associated with a checking account and decide whether a checking account is appropriate given a person's particular needs.

4.7 Comparing Checking Accounts

05/04/15

If Bank A charges a monthly service fee of \$2.50 and a per-check fee of \$0.15, while Bank B charges a monthly service fee of \$4 and a per-check fee of \$0.05, which bank will charge a customer more in fees if she writes 18 checks per month, and by how much? Is this bank ever a better choice?

$$\begin{array}{rcl} A) 0.15x + 2.50 & & 0.15x + 2.50 = 0.05x + 4 \\ & -0.05x & -0.05x \end{array}$$

$$B) 0.05x + 4$$

$$\begin{array}{rcl} 0.10x + 2.50 = 4 & & \\ -2.50 & -2.50 & \end{array}$$

$$<15 A) .15(18) + 2.50 = \$5.20$$

$$\frac{0.10x}{0.10} = \frac{1.50}{0.10}$$

$$>15 B) .05(18) + 4 = \$4.90$$

$$x = 15 \text{ checks}$$

Bank A is more by \$0.30

IWBAT understand the various fees that may be associated with a checking account and decide whether a checking account is appropriate given a person's particular needs.

4.7 Comparing Checking Accounts

05/04/15

Vocabulary: Appendix A.3 Key Terms
Practice: 4.7.2

**Banking project due Wednesday, May 13th.
Unit exam Wednesday, May 13th.**

IWBAT understand the various fees that may be associated with a checking account and decide whether a checking account is appropriate given a person's particular needs.

4.8 Savings Accounts

05/07/15

What would a good checking account for you include?

No Fees.

- checks
- monthly
- ATM
- card use
- activation
- large withdrawal

No overdraft charge

Interest

4.8 Savings Accounts

05/07/15

Explain the difference between a savings account and a checking account.

Savings sits in an account for a long time.

Savings collect interest.

Withdrawal process or transfer to checking

Checking money moves in & out easily
& usually does not collect interest

IWBAT

- work with APR and APY to calculate interest earned from a savings account
- perform calculations involving deposits and withdrawals.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

4.8 Savings Accounts

APR vs. APY

05/07/15

APR is the annual percentage *rate*. It is the annual rate of interest without taking into account the number of compounding periods.

APY is the annual percentage *yield*. This is a measure of the full amount of money earned over a year, which includes any compound interest.

IWBAT work with APR and APY to calculate interest earned from a savings account and perform calculations involving deposits and withdrawals.

4.8 Savings Accounts

05/07/15

APY is higher than **APR** if there is more than one compounding period in a year, so *lenders* often express their interest rates in the form of APR since it is lower. *Borrowers* (such as banks and other savings institutions) often express interest rates in APY since it is higher.

$$r = \text{APR}$$

$$\text{APY} = \left(1 + \frac{r}{n}\right)^n - 1$$

6% APR

Compounded
monthly

$$\text{APY} = \left(1 + \frac{.06}{12}\right)^{12} - 1$$

$$\text{APY} = 6.17\%$$

IWBAT work with APR and APY to calculate interest earned from a savings account and perform calculations involving deposits and withdrawals.

4.8 Savings Accounts

05/07/15

"interest calculated on an annual basis, accrued daily, and paid monthly."

7) The beginning balance of Otto's savings account for the month of May was \$1800, and it remained this way for the first 12 days of the month. On May 13, Otto made a withdrawal of \$400, so his balance changed, and it remained the same for a total of 8 days. On May 21, Otto made a deposit of \$1200, so his balance changed again, and it remained the same for a total of 11 days to finish out the month. If Otto's savings account has an APR of 7.3%, calculates interest daily, and pays interest at the end of the month, how much did Otto earn in interest in the month of May?

$$1800 \left(1 + \frac{.073}{365}\right)^{12} - 1800 = 4.32$$

$$1400 \left(1 + \frac{.073}{365}\right)^8 - 1400 = 2.24$$

$$2600 \left(1 + \frac{.073}{365}\right)^{11} - 2600 = 5.72$$

$$\$12.28$$

IWBAT work with APR and APY to calculate interest earned from a savings account and perform calculations involving deposits and withdrawals.

4.8 Savings Accounts

05/07/15

Vocabulary: Appendix A.3 Key Terms

Practice: 4.8.2

Quiz 4.8.3

**Banking project due Wednesday, May 13th.
Unit exam Wednesday, May 13th.**

IWBAT work with APR and APY to calculate interest earned from a savings account and perform calculations involving deposits and withdrawals.

4.9 Comparing Savings Accounts

05/08/15

What is the difference between APR and APY?

APY is higher than APR if there is more than one compounding period in a year.

4.9 Comparing Savings Accounts

05/08/15

Understanding how FDIC insurance works.

The FDIC insures deposits to all types of accounts including:

- checking accounts
- basic savings account
- money market
- certificate of deposit (CD)

<https://www.fdic.gov/deposit/>

What is covered and how much?

\$250,000 per person per account

If you have \$400,000, how should you divide it up?

Or should you? 2 or more single accounts
1 or more joint accounts

IWBAT

- compare two savings accounts based on various factors
- examine various types of savings accounts based on risk and liquidity.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

4.9 Comparing Savings Accounts

05/08/15

Types of Savings Accounts

- piggy bank
- basic savings account
- money market savings
- certificate of deposit (CD)
- savings bond



Increasing
Interest %



Increasing
Liquidity

Liquidity - the ability to access cash quickly

General rule: the higher the interest rate, the lower the liquidity

IWBAT compare two savings accounts based on various factors and examine various types of savings accounts based on risk and liquidity.

4.9 Comparing Savings Accounts

05/08/15

Vocabulary: Appendix A.3 Key Terms
Practice: 4.9.2

Banking project due Wednesday, May 13th.
Unit exam Wednesday, May 13th.

IWBAT compare two savings accounts based on various factors and examine various types of savings accounts based on risk and liquidity.

4.10 Savings & Checking Wrap up

05/11/15

How does FDIC insurance work?

Deposits for all types of accounts
up to \$250,000 per account
per account holder

IWBAT

- demonstrate my proficiency in this unit on practice problems before the unit test.

I will capture my thinking using the math note catcher including teacher and student-team modeled example problems on the Promethean board. I will demonstrate my understanding on my exit ticket.

4.10 Savings & Checking Wrap up

05/11/15

Complete Practice 4.10.2

Simple Interest

$$I = Prt \quad FV = P + Prt$$

Compound Interest

$$A(t) = P(1 + r/n)^{(n*t)}$$

$$APY = (1 + r/n)^n - 1$$

Banking project due Wednesday, May 13th.
Unit exam Wednesday, May 13th.

IWBAT demonstrate my proficiency in this unit
on practice problems before the unit test.

4.10 Savings & Checking Wrap up

Final questions on 4.10.2?

05/13/15

IWBAT demonstrate proficiency on my unit test.

**Turn in your banking presentation by
3PM today.**

(e-mail, thumb drive, or shared Google doc.)
mmelosh@dpsk12.net

Complete Unit Test 4.10.4 (CST)

IWBAT demonstrate proficiency on my unit test.